Current Issue
Browse Issues
Search
About this Journal
Instruction to Authors
Online Submission
Subscription
Contact Us
RSS Feed

Acta Medica Iranica
2009;47(4) : 85-94

Examining the impact of nanotechnology on medical and environmental sciences from the nanometric tools perspective

Cheraghi A, Bahrani N, Malekfar R

Abstract:

The idea of the technology of molecular engineering or nanotechnology was first proposed by Richard Fieman in 1959. Nanotechnology is, in essence, the technology of breaking down the molecular structures with an atomic precision. The strategic significance of this technology and its relations with minute particles in medical and environmental sciences are discussed in this paper. We first surveyed the potential capabilities of American National Sanitation Institutes and Scientific Foundation, as the leading country in the field of nanotechnology in areas such as health care, medicine and environment in the years 2000 and 2001. Bio-substances (common mediators of living tissues and inanimate substances and adaptable environmental substances), tools (bio-sensors and experimental tools) and diagnostic procedures (medical and genetic injection systems) related to nanotechnology are among the topics discussed in this article. Molecular building blocks of life (lipids, proteins, nucleic acids, carbohydrates and non-biological substitutes of them) are all substances with unique dimensions, repeatability and nonic scales. Using nanoic layers and instruments such as infrared Lasers within 1000 nanometric frequencies and He-Ne gas Lasers with 632.8 nanometric wavelength and with a power of about a few milli-Watts, the current difficult processes of setting the genome and decoding of genes can be revolutionized dramatically and their efficiencies can be increased. Increasing our ability in identifying genetic framework of individuals will entail a revolutionary development in medical diagnosis and treatment. In addition to facilitating optimal consumption of medicine, nanotechnology will also introduce new methods of delivering medicine to body, which in turn, will dramatically expand and improve medical treatment capabilities.

Keywords:

Nanotechnology ، biosensor ، Laser ، infrared laser ، He-Ne laser ، biological

TUMS ID: 1007

Full Text HTML Full Text PDF 178 KB

top